



Using Tik Tok as an effective learning tool in high school level education

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Abstract— This study investigates TikTok's potential as an educational tool in Food Production studies at the High school level, focusing on students at CETIS 164 "Jose Maria Luis Mora" in Cuitlahuac, Veracruz, Mexico. Using a mixed-methods, cross-sectional design, the research analyzed perceptions in five key areas: motivation and engagement, social interaction, visual appeal, educational utility, and knowledge retention. A 20-item questionnaire validated by Cronbach's alpha (0.973) was administered to a random sample of 31 students. Findings revealed positive perceptions, particularly in motivation (70%) and knowledge retention (75%), though social interaction showed variability. The study highlights TikTok's potential to enhance learning outcomes in specialized subjects, provided it is integrated with structured pedagogical strategies to address identified challenges and optimize its educational value.

Keywords— tiktok, education, learning styles

I. INTRODUCTION

In today's educational context, learning styles are a crucial factor influencing how adolescents acquire knowledge and skills. The diversity of learning styles, as outlined by Kolb (1984) and Gardner (1983), underscores the need to adapt teaching methodologies to students' individual preferences. In upper high school education, where technical and vocational training is essential, educators face the challenge of implementing approaches that truly capture young people's interest and engagement.

The COVID-19 pandemic has exacerbated pre-existing problems in adolescent learning. According to a UNESCO report (2021), the disruption of in-person classes and the lack of access to educational resources have led to a decline in academic performance and an increase in student discouragement. Many adolescents have struggled to adapt to online learning formats, resulting in a lack of meaningful learning and increased demotivation. Furthermore, the lack of social interaction during lockdown has affected their emotional and social

development—elements that are crucial at this stage of their education.

TikTok has emerged as an innovative educational tool, particularly in the context of higher education and distance learning. Its ability to capture students' attention and foster active learning has been demonstrated in various studies. Borrega highlights that TikTok not only serves as a motivational resource but also promotes meaningful learning by facilitating interaction and creativity in the educational process (Borrega, 2022). This platform allows educators to design activities that are both informative and entertaining, which can result in greater student engagement (Calle-Prado et al., 2022).

The COVID-19 pandemic accelerated the adoption of TikTok in educational settings, making it a popular medium for science communication and collaborative learning. Velarde-Camaqui notes that the pandemic spurred the use of TikTok as a tool to connect science communicators with their audience, facilitating the transmission of information in an accessible and engaging way (Velarde-Camaqui, 2024). Furthermore, Alarcón et al. mention that

educators have used TikTok to create challenges that encourage physical activity and hands-on learning among students, demonstrating its versatility as an educational tool (Alarcón et al., 2023).

However, the use of TikTok in education also presents challenges. Tejedor et al. note that the platform is still in its early stages in terms of its educational use, and that its multi-topic nature often prioritizes humorous content over academic discussion (Calvo et al., 2022). This suggests that, although TikTok has great potential, its effectiveness as a learning tool depends on proper implementation and the creation of content that encourages reflection and critical analysis.

This article focuses on the use of TikTok as an educational tool in high school vocational programs in Industrial Food Production. This field of study is vital, given that food production is a constantly evolving field that requires the adoption of innovative educational methodologies. Students in this program face specific challenges related to understanding technical processes and applying theoretical knowledge in practical situations.

II. BACKGROUND

In recent years, the use of digital platforms such as TikTok has gained prominence in the educational sphere, especially during the COVID-19 pandemic, when institutions faced the need to innovate their teaching methods. According to Clarissa and Lobo (2022), TikTok not only grew in popularity among young people but also proved to be an effective tool for increasing student engagement by adapting content to a short and engaging format.

The educational value of TikTok has been explored through various theoretical approaches. For example, Lamimi (2024) applied the Technology Acceptance Model (TAM) to study how students perceive the usefulness and ease of use of this platform in learning contexts. The research concluded that TikTok's key features, such as its short-form video format and content personalization, make it an ideal medium for "bite-sized" learning.

In the field of higher education, Middleton (2022) evaluated how TikTok can be used to teach complex concepts in a simple way. His research highlights that teaching strategies centered on short, visual

videos promote better content retention among students.

Furthermore, in the area of vocabulary acquisition, Rama (2023) investigated students' perceptions of using TikTok as a learning tool in language instruction. The results show that TikTok can significantly improve students' vocabulary by offering a dynamic and entertaining learning experience.

From a scientific perspective, Roberd and Roslan (2022) analyzed the impact of TikTok on elementary school students' performance in science. The study highlighted that the platform's interactive visual content helps reinforce theoretical concepts and improve understanding of complex topics, such as the study of light and energy.

Meanwhile, Yélamos-Guerra, García-Gámez, and Ortiz (2022) studied the use of TikTok in higher education as a motivational tool. Their findings emphasize that the visual appeal and the ability to personalize educational content on TikTok stimulate student interest and engagement.

Saxony (2024) highlighted the use of TikTok as a creative platform that fosters active learning, while Tan et al. (2022) explored its potential for teaching English as a second language (ESL). These authors found that key TikTok features, such as audio-video synchronization, can be strategically integrated to enhance teaching and promote collaborative learning in multilingual classrooms.

TikTok has emerged as an innovative educational tool that combines elements of social interaction, entertainment, and visual learning. Previous research highlights its ability to motivate students, improve information retention, and adapt to diverse educational contexts, laying a solid foundation for exploring its impact in specific areas such as industrial food production.

III. STATEMENT OF THE PROBLEM

Teaching in upper secondary education faces significant challenges, especially in technical subjects such as Industrial Food Production, where an understanding of technical processes and the application of theoretical knowledge are essential for the development of professional skills. However,

traditional teaching methods may prove unappealing to today's students, who prefer more dynamic and interactive formats.

In this context, TikTok has emerged as an innovative digital tool with a visual and concise format that captures young people's attention. Although this platform has been shown to improve motivation, engagement, and knowledge retention, its use in technical education remains limited and understudied. Previous research has highlighted its potential in general educational contexts, but there is little evidence to support its effectiveness in specific areas such as technical training in food production.

Furthermore, students' perceptions of TikTok as an educational tool vary significantly, especially regarding aspects such as social interaction and educational utility, raising questions about its effectiveness and the conditions necessary to maximize its pedagogical impact. It is essential to explore how this platform can be effectively integrated into the technical education curriculum, ensuring that it meets the learning objectives.

IV. RESEARCH QUESTION

What is the perception of students in the Industrial Food Production program at CETIS 164 regarding the use of TikTok as an educational tool in terms of motivation, social interaction, visual appeal, educational utility, and knowledge retention?

4.1. GENERAL OBJECTIVE

To analyze the perceptions of students in the Industrial Food Production program at CETIS 164 regarding the use of TikTok as an educational tool, evaluating its impact across five key dimensions: motivation and engagement, social interaction, visual appeal, educational utility, and knowledge retention.

3.2. SPECIFIC OBJECTIVES

- To evaluate students' perceptions of TikTok's impact on motivation and engagement in learning.
- To analyze how students perceive the social interaction fostered by the use of TikTok in an educational context.

- To examine students' assessment of the visual appeal and entertainment value offered by TikTok as an educational tool.
- Determine students' perceptions of TikTok's educational utility in relation to technical learning.
- Identify the perceived effect of TikTok on the retention and expansion of knowledge related to the Industrial Food Production course.

V. METHODOLOGY

STUDY DESIGN

A mixed-methods, cross-sectional, and descriptive design was employed. This approach allowed for data collection at a single point in time, analyzing students' perceptions of the use of TikTok as an educational tool in the Industrial Food Production course.

The study population consisted of students in the Industrial Food Production program at CETIS 164, located in Cuitláhuac, Veracruz. Using simple random sampling, a sample of 31 students was selected to ensure representativeness and reduce selection bias. The participants had an average age of 17 ± 0.66 years, with a gender distribution of 82% women and 18% men.

VI. RESULTS

This study evaluated the perceptions of 31 students in the Industrial Food Production program at CETIS 164 José María Luis Mora in Cuitláhuac, Veracruz, using simple random sampling, regarding the use of TikTok as an educational tool in the Industrial Food Production course. The analysis included data collection via a questionnaire with 20 items distributed across five main dimensions: motivation and engagement, social interaction, visual appeal and entertainment, educational utility, and knowledge retention and expansion.

Previously, a feasibility analysis was conducted using Cronbach's alpha to assess the internal consistency of the questionnaire, yielding an overall value of 0.973 and values above 0.900 for each of the dimensions, which supports the reliability of the instrument.

The average age of the participants was 17 ± 0.66 years. The gender distribution was as follows: of the 33 students evaluated, 6 were male (representing 18%) and 27 were female (representing 82%), with a male-to-female ratio of 4.5:1. There are nearly 5 female students for every male student.

Each dimension includes questions grouped by topic. The following statistics were calculated: Mean and Standard Deviation, based on a maximum of 20, as well as Percentages by Category:

As can be seen from the averages, the values range from high to moderate. Trend analysis allows us to observe how the dimensions identified in the questionnaire behave in terms of the responses and their overall impact.

Table 1: Analysis of the Dimensions Assessed in the Use of TikTok as a Teaching Tool

Dimension	Average	Standard deviation	Always (%)	Almost always (%)	Sometimes (%)	Almost Never (%)	Never (%)
Motivation and commitment	16	2	40	30	20	7	3
Social Interaction	14	3.5	50	30	15	3	2
Visual Appeal and Entertainment	15.5	2.2	60	25	10	3	2
Educational Value	14.5	3	35	30	25	7	3
Knowledge Retention and Expansion	16	2	40	35	20	3	2

Motivation and commitment: More than 70% responded "Always" or "Almost always," with a high score (16.0), indicating that TikTok is a motivating tool.

Social interaction: 50% responded "Always," but the high variability (SD: 3.5) indicates individual differences; only 5% view it negatively.

Visual appeal and entertainment: With 60% of respondents selecting "Always" and low variability (SD: 2.2), TikTok videos are highly valued for their visual appeal and educational value.

Educational value: Although 65% rated it positively, 25% responded "Sometimes," suggesting that its usefulness depends on the content design (mean: 14.5, SD: 3.0).

Knowledge retention and retention: 75% selected "Always" or "Almost always" (mean: 16.0, SD: 2.0), highlighting its effectiveness in retaining information thanks to its visual and practical design.

VII. DISCUSSION

Various studies have demonstrated the positive impact of digital platforms on education. For

example, a study conducted by Caldeiro-Pedreira and Yot-Domínguez (2023) concluded that "the use of TikTok in the classroom can increase students' interest and motivation, facilitating a better understanding of the content" (p. 23). Furthermore, another study by Acevedo Borrega et al. (2022) found that "students view the use of TikTok as a teaching resource positively, highlighting its ability to facilitate learning in a dynamic way" (p. 12). This research underscores the importance of exploring the use of TikTok in the context of CETIS 164 and its potential to improve learning outcomes in industrial food production.

Students view TikTok positively as an educational tool in the Industrial Food Production course, particularly in terms of motivation, visual appeal, and knowledge retention, consistent with the findings of Clarissa and Lobo (2022), who highlight its ability to foster engagement through a short and engaging format. More than 70% of participants believe that TikTok motivates learning, a result aligned with Yélamos-Guerra et al. (2022) and Middleton (2022), who underscore its effectiveness in simplifying concepts and increasing retention.

In terms of social interaction, although 50% rated TikTok positively, the high variability (SD: 3.5) suggests mixed perceptions. This finding contrasts with that of Roberd and Roslan (2022), who reported a positive impact on student collaboration, likely due to contextual and pedagogical differences.

Regarding educational value, 65% view it as positive, but 25% responded "sometimes," reflecting that perception depends on content design, as noted by Lamimi (2024). Optimizing TikTok requires content tailored to the curriculum and strategies that integrate entertainment and hands-on learning, in line with Saxonia (2024) and Tan et al. (2022), who highlight its potential in collaborative and multilingual settings.

VIII. CONCLUSION

Current trends indicate that students view TikTok as a useful and engaging learning tool. It particularly excels in three key areas: motivation, visual appeal, and knowledge retention. However, there is room for improvement in terms of social interaction and the

perception of educational value, both of which could be enhanced through more structured pedagogical strategies.

The dimensions of motivation and visual appeal received mostly positive responses from students, with low standard deviations. This indicates a strong consensus among students regarding TikTok's potential to foster interest and engagement in learning.

On the other hand, social interaction and educational value show greater variability in students' responses. This suggests that there are individual differences in how students perceive these aspects of TikTok. To fully harness the platform's educational potential, it is important to address these areas of opportunity through effective teaching strategies.

Finally, there is a correlation between visual appeal and motivation. The visually appealing design of TikTok videos fosters students' interest and engagement, which in turn boosts their motivation to learn. This correlation underscores the importance of considering visual design when creating educational content on TikTok.

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